

# कु'न्धन्त्रेन्य'स'न्दक्षेत्रें क्षेत्रेन्'लचन्न'र्ट्ना'से'के्या स

# HYDROLOGY & WATER RESOURCES SERVICES DIVISION NATIONAL CENTER FOR HYDROLOGY & METEOROLOGY THIMPHU: BHUTAN



Status and River Level Trends:

Saturday, August 31, 2019

Issued at: 10:00 AM

# Glacier Lake Outbrust Flood (GLOF) Early Warning System

#### 1. Punatshang Chhu Sub Basin

SI Nos.	River Basin Number	Basin Name	Name of River	Station Name	Highest Water Level Recorded	Alert Water Level	Alerm Water Level	Water Level (m) recorded at 9 AM Yesterday	Water Level(m) recorded at 9 AM Today	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Downstream Settlement								
1				Luggay Tsho		7.80	10.00	6.67	6.66	-0.01									
2				Thorthormi Tsho		7.50	5.00	5.81	5.80	-0.01									
3				Rapstreng Tsho		7.40	5.00	6.31	6.29	-0.02	Thanza,Tenchey,Lhedi and Lunana area and Downstream of Pho Chhu and Puna-Wangdue Valley								
4				Bay Tsho		7.40	5.00	6.49	6.45	-0.04	,								
5	Basin II	Punatshang			Thanza		7.70	8.70	NR	NR	#VALUE!								
6	Duan n	Chhu					l l	1	1			Tarina Wachey		8.50	10.50	6.83	6.84	0.01	Pho Chhu Valley (Tamidamchu, Wolathang, Samidingkha, Khawajara, Shengana,
7					Dangsa		5.50	7.00	4.61	4.70	0.09	Khuruthang) Puna-Wangdue Valley and Downstream							
8				Taksemakhang		7.50	8.50	NR	NR	#VALUE!									
9				Tashithang		9.00	10.50	NR	NR	#VALUE!	Gasa,Mo Chhu Valley,Puna-Wangdue Valley and Downstream								
10				Yebesa		5.00	7.00	2.01	2.13	0.12									

Approximate Lead Time for Evacuation after the detection of flood at Four lake Sensor								Approximate Lead Time for Evacuation after the detection of flood at Dangsa Sensor					
SI Nos		Approx. Distance from Sensor (Bay Tsho)	f C	Approx. Distance from Sensor (Thorthormi Tsho)	Approx. Distance from Sensor (Luggey Tsho)	Tme	SI Nos	Name of Place Downstream	Approx. Distance from Sensor (Bay Tsho)	Approx. Time for Flood to reach at the Place	Approx. Tme available for Evacuation		
1	Thanza	1.5 km	2.8 km	3.3 km	6.7 km		1	Wolathang	5.8 km	30 minutes	30 minutes		
2	Tenchey	2.9 km	4.1 km	4.6 km	8.2 km	20-60	2	Samdingkha	12.0 km	55 minutes	55 minutes		
3	Tshojo	8.1 km	10.0 km	10.5 km	13.8 km	minutes	3	Punakha Dzong	20 km	90 minutes	1 hours 30 minutes		
4	Lhedi	16.7 km	17.6 km	18.5 km	21.8 km	1	4	Khuruthang Town	24 km	120 minutes	2 hours		
5	Puna-Wangdue Valley	100 km	100 km	100 km	100 km	5-7 hours	5	Bajo Town	30.5 km	145 minutes	2 hours 25 minutes		
							6	Wangdue Bridge	33 km	150 minutes	2 hours 30 minutes		

NOTE: The above distance were Calculated from basic tools in the Google Earth Map, thus diastance were approximate only.

## Glacier Lake Outbrust Flood (GLOF) & Rainstorm Flood Early Warning System.

### 2. Chamkhar Chhu and Mangdue Chhu Sub Basin

SI Nos.	River Basin Number	Basin Name	Name of River	Station Name	Highest Water Level Recorded (m)	Alert Water Level (m)	Alerm Water Level (m)	Water Level (m) recorded at 9 AM Yesterday	Water Level(m) recorded at 9 AM Today	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Downstream Settlement
1				Tshampa		5.00	6.50	4.32	4.34	0.02	
2			Chamkhar Chhu	Khagthang		5.50	6.00	4.74	4.74	0.00	Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangrithng Pry School, Gvelkhar Village and Downstream settlement under Zhemgang.
3	Basin III	Manas		Kurjey	5.72	3.30	5.00	2.27	2.32	0.05	Scient, Sychian Vinige and Dovintenia Sciencia and Library.
4			Mangdue Chhu	Jongthang		5.90	7.00	4.78	4.95	0.17	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa
5		Mangaue Ciniu	Riizam	5.52	4.20	5.50	2.44	2.80	0.36	and Zhemgang	

				Djizani	3.32	4.20	5.50	2,44	2.00	0.50				
	Approximate Lead Time for Evacuation of Chamkhar Chhu Sub Basin						Approximate Lead Time for Evacuation of Mangdue Chhu Sub Basin							
Appı	Approximate Lead Time for Evacuation after the detection of Flood at the Tshampa AWLS						Approximate Lead Time for Evacuation after the detection of Flood at the Jongthang AWLS							
SI Nos	SI Nos Name of Place Downstream Approx. Distance from the Tshampa AWLS Tshampa AWLS		Elevation	Approx. Lead Time	SI Nos	Name of Place Downstream	Approx.Distance from the Tshampa AWLS		Elevation	Approx. Lead Time				
1	Khagthang	20.3 km	20.3 km	3704 m	27 minutes	1	Bjizam	18.5 km	18.5 km	2223 m	34 minutes			
2	Chorkhor Toe PS	4.5 km	24.8 km	2904 m	34 minutes	2	Dam Site	7.8 km	26.3 km	1848 m	50 minutes			
3	Kurjey	12.4 km	37.2 km	2771 m	60 minutes	3	Power Plant	20.4 km	46.7 km	1024 m	88 minutes			
4	Wangdicholling	5.7 km	42.9 km	2600 m	79 minutes									
5	Bumthang	1 km	43.9 km	2562 m	83 minutes	1								

## 3. River Level Status of Gauging Station

SI Nos.	Station Type	River Basin Number	Basin Name	Name of River	Station Name	Highest Water Level Recorded (m)	Water Level (m) recorded at 9 AM Yesterday	Water Level(m) recorded at 9 AM Today	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Weather Condition	Downstream Settlement
1	AWLS				Dodena		1.87	1.86	-0.01	Cloudy	Thimphu Valley and Downstream
2	Principal			Thim Chhu	Lungtenphu	2.82	1.21	1.24	0.03	Cloudy	Inimpili Valley and Downstream
3	Principal				Damchu	6.00	2.73	2.83	0.10	Cloudy	Chukha and Downstream
4	Secondary	Basin l	Wang Chhu	Haa Chhu	Haa	2.60	1.00	1.08	0.08	Cloudy	Haa and Wang Chhu Downstream
5	Principal			Pa Chhu	Bonday		1.07	1.40	0.33	Cloudy	Downstream of Paro Valley and Wang Chhu Basin
6	Principal			Amo Chhu	Dorokha		3.15	3.25	0.10	Cloudy	Samtse, Phuntsholing and Downstream
7	Secondary			Amo Cnnu	Droyagang	7.07	3.15	3.80	0.65	Cloudy	Phunsholing and Downstream
8	Secondary			Pho Chhu	Samdingkha	6.10	3.85	4.05	0.20	Rainy	Puna-Wangdue Valley and Downstream
9	Principal			Mo Chhu	Yebesa	3.94	2.00	2.11	0.11	L/Rain	Mo Chhu Valley and Downstream
10	Secondary			Punatshang Chhu	Wangdue Bridge		2.40	2.65	0.25	Rainy	PHPA I,PHPA II and Downstream
11	Principal	Basin II	Punatshang Chhu		Wangdue Rapid	7.82	2.99	3.15	0.16	Cloudy	THE TAXABLE DOWNSELLER
12	Principal	Duan n	Tunatsnang Cinu		Turitar Sunkosh	6.68	3.25	3.35	0.10	Cloudy	Downstream of Dagana and Lhamoizingkha
13	Secondary				Sunkosh Bridge		2.35	2.50	0.15	Cloudy	
14	Principal				Kerabari	11.90	5.30	5.40	0.10	L/Rain	Lhamoizingkha and Downstream
15	Secondary			Mao Chhu	Sherzhong		3.90	4.00	0.10	Rainy	Gelelephu Valley and Downstream
16	Principal			Mangdue Chhu Chamkhar Chhu	Bjizam	5.35	2.45	2.79	0.34	Cloudy	MHPA Dam, Power House and Downstream of Trongsa & Zhemgang
17	Secondary				Dakpai Chhu	2.26	1.50	1.79	0.29	Rainy	Downstream of Zhmgang and Panbang
18	Principal				Tingtibi	7.45	3.57	3.80	0.23	Kumy	
19	Principal				Kurjey	4.00	2.27	2.32	0.05	Cloudy	Chamkhar Valley, Zhemgang and Downstream
20	Principal				Shingkhar (Bemethang)		2.11	2.05	-0.06		Zhemgang and Downstream
21	Principal			Kuri Chhu Kholong Chhu	Sumpa	7.65	4.30	4.60	0.30	Cloudy	Lhorto Donatoro Vinimoro VIIDA and Donatoro also de Vini Chia
22	Secondary				Khoma	5.30	1.93	2.14	0.21	Cloudy	Lhuntse Downstream, Kurizampa, KHPA and Downstream along the Kuri Chhu
23	Secondary		Manas		Autsho	8.48	4.20	4.74	0.54	Cloudy	Kurizampa,KHPA and Downstream along the Kuri Chhu
24	Principal	Basin III			Kurizampa	18.45	8.34	8.47	0.13	Cloudy	KHPA and Downstream along the Kuri Chhu
25	Principal				Muktirap	6.00	2.50	3.02	0.52	cloudy with sunlight rain	Doksum, Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
26	Secondary				Doksum		4.24	4.37	0.13	Cloudy	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
27	Secondary			Drangme Chhu	Chazam		8.65	9.50	0.85	Cloudy	Downstream Settlement of Kuri-Gongri and Panbang
28	Principal				Ozorong	6.75	2.45	3.44	0.99	cloudy	Downstream of Kuri-Gongri and Panbang
29	Secondary				Sheri Chhu	2.58	1.50	1.71	0.21		Downsteam of Kar-Gongri and Panbang
30	Principal				Panbang	12.48	5.60	5.73	0.13	Rainy	Manas and Downstream
31	Principal			Ngara Ama Chhu	Pangzam		6.00	6.00	0.00	Cloudy	Bangtar Settlement and Downstream
32	Principal			- sgara Ama Cullu	Bangtar		2.20	2.30	0.10	-	Downstream of Bangtar Settlement

NOTE The Water Level are relative Gauge Hight of the Observation site reference to the Site Specific and doesnot represent the actual water depth.

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ALARM
NR Represent that the Data has not been reported or Not Updated

ISSUED BY: FMCR,HWRSD,NCHM